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Contraceptive Security in Armenia: Segmenting the Family Planning Market

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COMMERCIAL MARKET STRATEGIES
NEW DIRECTIONS IN REPRODUCTIVE HEALTH

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Commercial Market Strategies (CMS) is the flagship private sector project of USAID's Office of Population and Reproductive Health. The CMS project, in partnership with the private sector, aims to increase access to and demand for quality reproductive health and family planning in developing countries.

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1 Executive Summary

Despite high levels of literacy and an extensive health care system, only 20 percent of ever-married women in Armenia use modern contraception. More women rely on traditional contraceptive methods, while an even higher number use no method at all. Abortions are common and although the procedure is presumed to be free of charge, women overwhelmingly report that the cost of abortions is a problem.

The intrauterine device (IUD) is the most popular method of modern contraception in Armenia, used by 9 percent of ever-married women of reproductive age. Essentially all IUD insertions occur in the public sector using donated products. Condoms are the second most common modern method (used by 6 percent of women); among the wealthiest Armenian women, this method is as popular as the IUD. Female sterilization (generally performed in public facilities) is the method of choice for 3 percent of women, while contraceptive pills are used by only 1 percent of women.

Although government service providers dominate the market for clinical and long-term methods, condoms are heavily served by the commercial sector. As many as 90 percent of the condoms used by wealthier Armenians are purchased in pharmacies. Even the poor use private-sector sources, although to a lesser extent.

Given that overall contraceptive use is low and a number of Armenians avail themselves of resupply methods in the private sector, who would be at risk if a contraceptive supply crisis occurred in Armenia? The commercial distribution system for condoms is already in place and poised to meet much of the need for that method. Also, oral contraceptives (OCs) are available in pharmacies; the least expensive OC can compete on an annual basis with the cost of commercially available condoms. OC use has its hidden costs, however; to receive a prescription for OCs in a government clinic, a woman is required to undergo blood tests for which she usually will be charged. Under-the-table payments for such physician visits also are common.

A portion of current contraceptive users relies on the public sector for their methods, however, and they would be vulnerable if donated supplies disappeared. Therefore, it is recommend that any contraceptive security strategy focus on the needs of this group — specifically on making IUDs available to public-sector clinics for all who seek them, and targeting donated condoms and pills to clinics which serve the rural and urban poor or to women eligible for income assistance. Experience shows that most other Armenians can buy resupply methods in the market.

Given Armenia's small population and low use of modern methods, the quantities required to meet the IUD need for all users and resupply methods for the poorest 40 percent of the population are minimal. On an annual basis, Armenian women who currently fall into one of these categories would need approximately 11,000 IUDs; 32,000 cycles of pills; and 765,000 condoms. As the government may not be willing to purchase contraceptive commodities, donors may need to step in when current supplies are exhausted. The remaining current need for condoms and pills can most likely be met by the commercial sector. In the current environment, creation of a social marketing program in Armenia would be cost-prohibitive and could cut into the existing commercial market. In addition, given its pro-natalist tendencies, the Armenian government is not likely to support a visible social marketing campaign. In light of these constraints, policy or advocacy initiatives may not be feasible. To further strengthen and expand the existing private market, however, a targeted effort to work with existing private-sector distributors to improve patient education should be undertaken. A reproductive health telephone hotline could counter the high level of misinformation about modern contraceptive methods that still exists among the Armenian population. Finally, an NGO network could advocate to improve policies that affect reproductive health products and services in the country.

2 Country Context

Even more so than other countries of the former Soviet Union, the Republic of Armenia has experienced difficulties and economic decline. War with Azerbaijan, earthquakes, and geographic isolation have exacerbated the problems of the economic transition. These factors have contributed to emigration on a large scale, although exact numbers are not known. Additionally, a significant number of Armenians have sought work in Russia while leaving their families at home. Armenia inherited a heavily staffed, Soviet-model, health care system, but lacks the tax base to support it. While health institutions remain in public ownership, out-of-pocket payment for health care is widespread. According to available data, Armenians infrequently utilize primary health care services.

Family planning patterns resemble Soviet tendencies as well. Heavy reliance on abortion and misconceptions about hormonal contraceptives result in low levels of modern contraceptive use. Fertility, however, has declined significantly since independence. Low fertility combined with emigration has resulted in a population decline. Despite the potential hardships the nation may face as a result of falling population, at the individual level, Armenians express a strong desire to limit family size.

During the 1990s, a network of family planning cabinets was developed with support from the United Nations Population Fund (UNFPA) and housed in public health clinics and hospitals. Supplies for these cabinets — condoms, oral contraceptives (OCs) and intrauterine devices (IUDs) — were provided by UNFPA in 1998. At time of report, it was anticipated that these supplies would be exhausted or would expire within the next 12 to 18 months. This scenario, combined with the fact that the government of Armenia is not likely to step in and procure contraceptives, is cause for concern.

3 Objectives of the Report

In light of this potential contraceptive crisis, USAID/Armenia asked the Commercial Market Strategies Project (CMS) to answer the following questions:

- What proportion of the population relies on the public sector for provision of family planning methods and, therefore, is at risk for losing access to its method?
- Might social marketing be a cost-effective approach to meeting the needs of family planning users and intenders?
- What is the likely projected demand for modern contraceptive methods in the short-term?

This study presents findings from a market segmentation analysis of family planning in Armenia. Specifically, the report identifies and characterizes market segments and offers suggestions for effectively targeting reproductive health resources within the constraints of the political and economic environment.

4 Segmentation Methodology

This study explores current family planning practices in Armenia by understanding and then segmenting the family planning market. Our approach comprises three steps. First, using data from the Armenia Demographic and Health Surveys' (DHS) 2000 Household Questionnaire, the households were stratified according to socio-economic status (SES), effectively dividing the population into quintiles. The quintile information was then merged with data from the Individual Women's Questionnaire. For the purposes of this analysis, the sample was restricted to women who have ever been married, resulting in a sample size of 4,643 women. Second, the profiles of the quintiles are described to better understand the characteristics of each group. Finally, the segments of particular interest to USAID/Armenia are defined — those women who most probably will rely on the public sector for their contraceptive method. This three-step segmentation approach was selected to best answer the above questions, which relate to ability to pay and source of family planning methods.

4.1 Economic Stratification

The initial phase of the segmentation process involved stratifying the population according to a measure of wealth. To assess differences by economic status, households were classified into quintiles based on ownership of household assets.[1] The Armenia DHS collected information on a wide array of assets including consumer durables, housing characteristics, and amenities.

CMS aggregated these assets into a single index based on a regression analysis. Household expenditures were regressed on an array of household assets. Predicted expenditures then were calculated, which are equivalent to an index of assets. Once the index was calculated for each household in the data set, the households were ranked and divided into five equal groups or quintiles. The household quintile ranking was then applied to the women's dataset. Quintile 1 represents women in the poorest group and Quintile 5 represents women in the wealthiest group.

Table 1 presents the percentage of households that own the various assets across the quintiles. The highest quintile has near universal ownership of refrigerators, telephones, televisions, and improved housing conditions, as well as majority ownership of automobiles. The second, third, and fourth quintiles are similar except that car ownership is less than half that of the richest quintile and there are increasingly lower levels of improved housing conditions and asset ownership. The lowest quintile has low ownership levels of all assets except televisions. Ownership of various housing improvements also is low.

[1] See Appendix 1 for details.

Table 1: Percent of households with selected assets and amenities by economic status

	Quintile					
	1	**2**	**3**	**4**	**5**	**Total**
Median Monthly Household Expenditures (Drams)	2,858	4,420	5,969	7,951	9,724	6,184
Percent in urban areas	18.0	38.0	67.8	85.1	95.8	60.8
Household Assets						
Refrigerator	28.9	66.9	83.4	98.7	99.9	75.4
Telephone	26.3	43.1	62.3	80.1	95.8	61.4
Television	70.9	84.5	93.3	95.6	99.4	88.7
Car	5.9	16.6	22.3	23.5	50.2	23.6
Radio	13.4	22.9	36.3	38.4	80.6	38.2
Bicycle	2.6	7.1	7.5	7.3	8.4	6.6
Motorcycle	0.8	2.1	1.9	1.7	1.4	1.6
Rural Assets						
Garden space	80.9	72.7	51.9	36.1	29.4	54.3
Livestock or Poultry	61.5	57.9	38.4	21.4	7.2	37.3
Household Amenities						
Uses Refined Cooking Fuel	17.0	60	86.1	98.2	99.9	72.1
Flush Toilet	18.0	40.5	70.1	89.6	97.2	62.9
Piped Water	20.7	41.9	66.5	88.6	97.0	62.7
Improved Flooring	22.7	29.6	39.2	62.3	87.0	48.1
Electricity	95.2	99.7	99.9	100	100	98.9
Number of Households	**1,212**	**1,190**	**1,193**	**1,198**	**1,184**	**5,977**

Exchange rate (as of November 2000): 1USD = 540 Armenian Drams

4.2 Quintile Characteristics

4.2.1 Socio-Demographic Profile

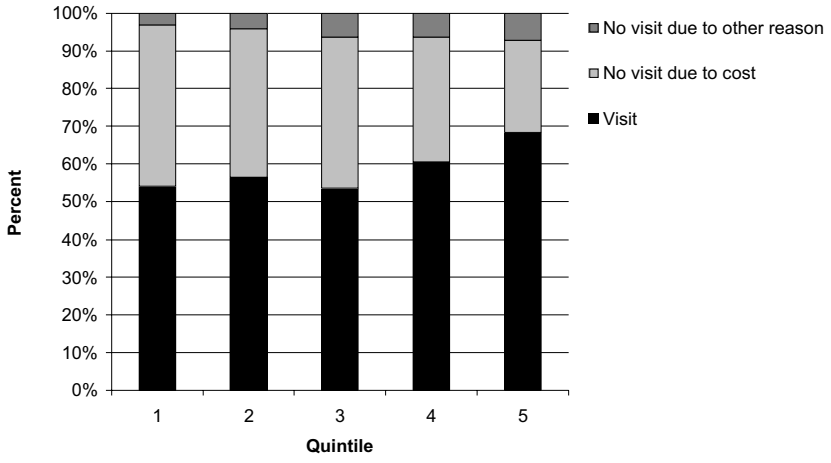
Certain socio-demographic differences exist between the quintile groups (see Appendix B). There is a slightly higher concentration of younger women in the poorer quintiles. It is important to note that 15 to 19 year olds comprise only two percent of the sample — a direct result of restricting the sample to women who have ever been married. Although Armenian women are generally well educated, wealthier women are significantly more likely than poorer women to be educated beyond the secondary level. Striking differences in area of residence across the quintiles also are evident. While the majority of women in Quintile 1 reside in a rural area[2] (84 percent), nearly all women in Quintile 5 reside in an urban area (94 percent). There is a direct linear relationship between urban residence and wealth. Quintile differences also exist in the region of residence. For example, Gegharkunik has the highest concentration of poorer women, whereas the majority of women from the highest two quintiles live in Yerevan.

Few differences exist between the quintile groups in terms of religion or ethnicity, with the exception that women of Yazidi descent are more prevalent in the poorest quintile.

4.2.2 Utilization of Primary Health Care

Utilization of health care services is low in Armenia. Only half the women reported they had a need to visit a doctor in the past year (see Appendix C). Of those women, slightly over half actually went to one. As illustrated by Figure 1, more than one-third of the women reported lack of money as the reason they did not go to the doctor, ranging from 25 percent for Quintile 5 to 43 percent for Quintile 1.

Figure 1: Percent distribution of doctor visits in the past year among women who had medical need (n=2,452)



[2] Armenia 2000 DHS followed the "rule of country" in determining categories for urban/rural location. Urban location includes the capitol Yerevan, large cities, small cities, and towns with a population greater than 10,000. Rural location comprises geographic areas where the population is 10,000 or less.

On average, women in the sample spent 14,000 drams or US$26 during the past year for their medical expenses. Given that only 31 percent of women reported they actually visited a doctor, one can surmise from the data that while some women are paying nominal amounts for health care, a considerable number are paying a significant amount of money for health services.

4.2.3 Abortion Practices

Abortion is legal in Armenia and the data show that the procedure is widely used. Women in the sample reported a range of 0 to 33 abortions. Sixty-five percent of women have had at least one abortion; among these women the mean number of abortions is 3.3. Nearly half (49 percent) of the women in the sample reported having two or more abortions, while 14 percent had five or more (see Appendix D). Interestingly, there is little difference between economic groups in the pattern of abortions. Abortion rates do not vary significantly by area of residence, although the mean number of abortions among rural women is slightly higher than for urban women. This rural-urban difference is most noticeable among women who reported multiple abortions (five or more). Even the cost of an abortion is a universal problem: 77 percent of all women (and 84 percent of the poorest quintile) said that cost was an issue. Although abortions are presumably performed free of charge in government facilities, in-country sources report that actual costs range from US$7 to $50, depending on the region.

4.2.4 Fertility Desires and Unmet Need

Only 4 percent of women reported they were pregnant at the time of the interview. Of these pregnancies, 64 percent were wanted, while 36 percent were mistimed or unwanted. Across all income groups, the desire to have another child is minimal and varies little. Approximately 19 percent of women reported they want another child, compared to 71 percent who want no more children. These fertility preferences are validated by a question regarding a potential pregnancy. Of those women currently at risk for pregnancy, 81 percent stated that it would be a major problem if they were to become pregnant in the near future.

A common approach to exploring the interaction between fertility desires and family planning use is determining the unmet need for family planning. Unmet need can be an important indicator of women who are at risk for an unwanted pregnancy. According to the standard definition of unmet need developed by Charles Westoff et al.,[3] fertile women who wish to postpone or avoid childbearing, but are not using any method of contraception (including use by their partners), are defined as having an unmet need for family planning. Those who want no more children are considered to have an unmet need for *limiting* births; those who want more children, but not for at least two more years, are considered to have an unmet need for *spacing* births. Based on these definitions, unmet need among Armenian women is primarily for limiting childbearing. Unmet need ranges from 10.6 percent among wealthier women to 12 percent among the poorest women (see Appendix E).

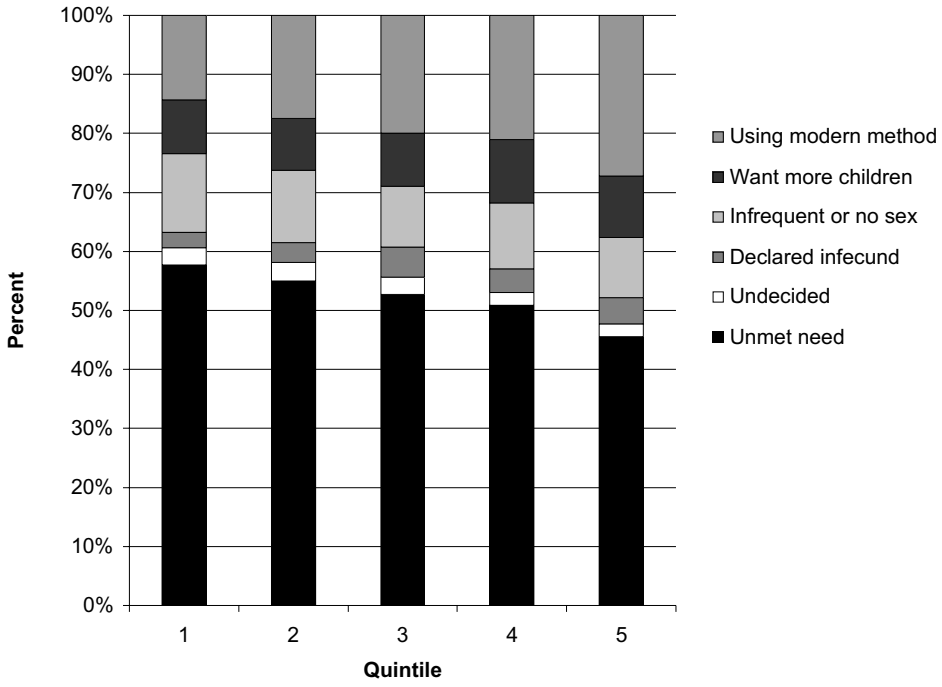
The standard definition of unmet need, however, considers women who use traditional or folk methods as having their family planning needs met. In Armenia, the majority of women (63 percent) considered as having their family planning needs met are traditional method users. The problem with this classification is that traditional methods have high failure rates. Therefore, they are more likely to

[3] Westoff, Charles F. and Luis Ochoa. June 1991. Unmet Need and the Demand for Family Planning. *Demographic and Health Surveys Comparative Studies* 5. Columbia, Maryland: Macro International.

result in unwanted pregnancies. In fact, heavy reliance on the withdrawal method in Armenia is a major contributor to the high abortion rate[4].

In light of the potential for the standard definition of unmet need to overlook pregnancy risks for traditional method users, it was of interest to USAID/Armenia to examine unmet need in the context of modern method use. An alternate definition of unmet need was constructed to demonstrate the potentially larger proportion of women at risk for unwanted pregnancy. According to this alternative definition, only women using a modern method of contraception are included in the using modern method category, as shown in Figure 2. Women who use traditional or folk methods are distributed among the five other mutually exclusive categories. Thus, unmet need comprises fertile women who are not currently using a modern method and wish to delay (for at least two years) or avoid childbearing. As evident in Figure 2, there is an inverse relationship between modern method use and unmet need across the quintile groups. Based on this alternate definition, unmet need for family planning ranges from 46 percent among the wealthiest quintile to 58 percent among the poorest.

Figure 2: Percent distribution of unmet need (alternative definition, n=4,643)

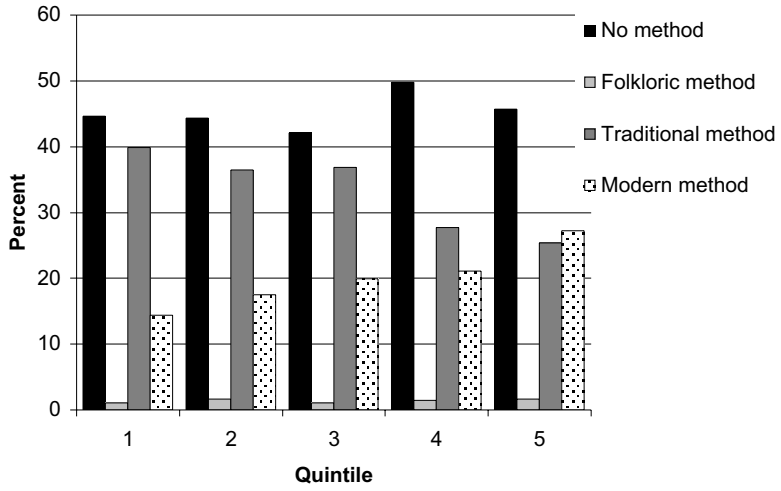


[4] Westoff, Charles F., Jeremiah Sullivan, Holly A. Newby and Albert R. Themme. 2002. Contraception-Abortion Connections in Armenia. *DHS Analytical Studies No. 6.* Calverton, Maryland: ORC Macro.

4.2.5 Family Planning Use

Although knowledge of modern contraceptive methods is universally high, actual use of these methods is low. Only 20 percent of Armenian women use modern contraception, varying from 14 percent of the poorest quintile to 27 percent of the wealthiest quintile (see Appendix F). As wealth increases, so does the likelihood of using a modern method. Conversely, use of traditional methods, largely withdrawal, declines as wealth increases. Forty percent of the poorest quintile uses traditional methods, whereas only 25 percent of the wealthiest quintile does. Almost half the women (45 percent) use no method at all, and this varies little by quintile. Figure 3 highlights these findings.

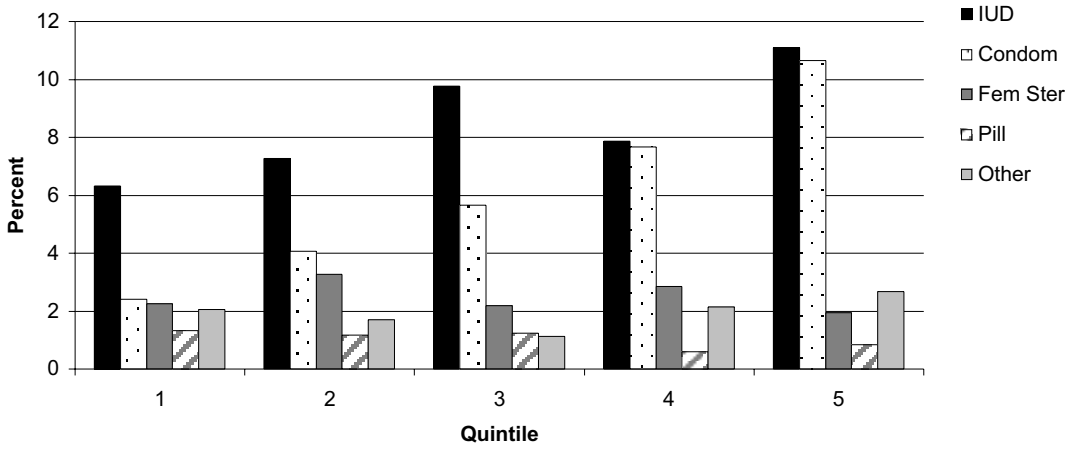
Figure 3: Family planning use among all women in the sample by quintile (n=4,643)



While overall use of modern contraceptive methods is low, the three most commonly used methods are IUDs (9 percent), condoms (6 percent), and female sterilization (3 percent). As the most popular form of contraception, IUD use ranges from nearly 6 percent of women in the poorest quintile to 11 percent of women in the richest quintile (although usage drops slightly for women in Quintile 4). About 6 percent of all women report using condoms, and use increases steadily as wealth increases. The wealthiest women are four times more likely than the poorest women to use condoms: while only 2 percent of women in Quintile 1 use condoms, 11 percent of women in Quintile 5 report using this method. The third choice for contraception, female sterilization, is used by only 2 to 3 percent of women in each quintile. Overall OC use is quite low, peaking at 1.3 percent among the poorest women and dropping to less than 1 percent among the wealthiest. Other modern methods, such as injection, implant, female condom, foam, jelly, and lactational amenhorrea method (LAM)[5], are not widely used, and were grouped into the "Other" category. Figure 4 presents utilization patterns by method and quintile.

[5] While the Armenia DHS classifies LAM as a modern method, the practice is not widely taught nor used in Armenia. It is likely that LAM is used more as a folk method in Armenia than as a modern method. As such, women may have heard from friends or relatives that breastfeeding can prevent pregnancy, but may not know that the practice of LAM refers to exclusive breastfeeding for a period of six months after childbirth.

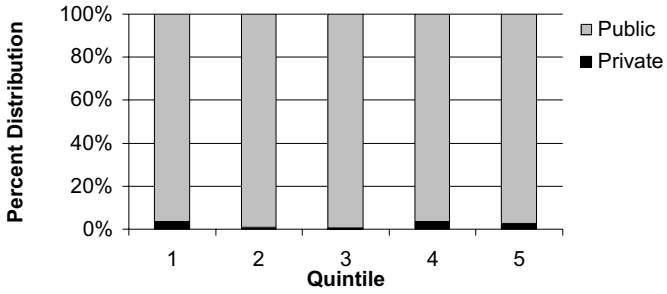
Figure 4: Percent of women who use modern contraception by method and quintile (n=4,643)



4.2.6 Source of Contraceptives

The quintile groups were analyzed to determine the extent to which women rely on public and private sources of contraceptives. Almost all IUD users get their method from the public sector, as shown in Figure 5. There is little difference between wealth categories in the extent of reliance on the public sector — at least 96 percent of every group depends on a public source for their IUDs. According to the CMS retail audit,[6] although pharmacies used to stock IUDs, once donated devices became available at family planning cabinets/clinics in the late 1990s, there was no longer any demand for them in the commercial sector, so pharmacies stopped supplying them.

Figure 5: Source of IUDs by quintile (n=362)



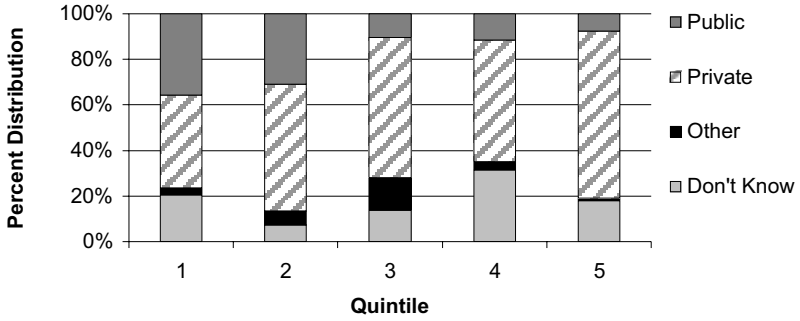
Although not a concern for the security of supplies, sterilization follows the same pattern of reliance on the public sector. It is a less popular clinical method, used by only 2 to 3 percent of women in each income group. Only a handful of women in Quintile 5 used private providers for sterilization — most likely the *de facto* private services in certain elite Yerevan hospitals.

Condoms are by far the most important resupply method and the private-sector market plays an important role in supplying them. As depicted in Figure 6, 73 percent of the women in the wealthiest quintile obtain their condoms from a private source, usually a pharmacy. The CMS retail audit

[6] Two CMS representatives conducted a review of private-sector distribution of family planning supplies, including a retail audit of pharmacies, in September 2001. Their findings were previously reported to USAID/Armenia.

revealed that an annual supply of low-end condoms retailed for about US$22 in pharmacies. For condoms, there are a substantial number of women who do not know the source of the condom — presumably because their partner provided it. If we assume that males are buying condoms commercially (i.e., that most of the "Don't know" responses could be coded as "Private") then the wealthiest women are 90 percent reliant on the private sector for supply of condoms today.

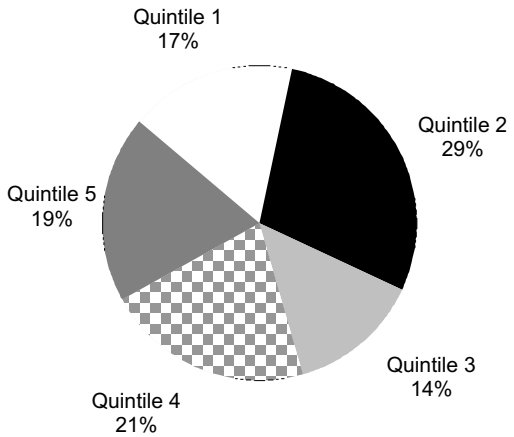
Figure 6: Source of condoms by quintile (n=265)



In rural areas, the poorest condom users are 55 percent reliant on the public sector; the next quintile is 47 percent reliant (see Appendix H). Public sector reliance falls to 24 percent and 25 percent in the next two quintiles. No rural respondent in the wealthiest quintile reported using a public-sector source for condoms.

Figure 7 shows the distribution of the public-sector condom market. Two caveats are necessary here. First, the number of condom users who reported obtaining their method through a public source is small — only 52 cases. Second, the distribution is skewed because condom use is more prevalent in the upper quintiles. As a result, women in the top two quintiles account for 40 percent of public-sector condom users. Clearly, as shown earlier in Figure 6, the majority of women in these two quintiles are able to purchase condoms from the commercial sector, offering evidence that all women in the upper quintiles should be able to do the same (and thus shift from the public sector to the private sector).

Figure 7: Distribution of public sector condom use by quintile (n=52)



It is difficult to draw conclusions about the sources of supply for the other major resupply method, oral contraceptives, as few Armenian women use this method. No more than 1.5 percent of any income group uses OCs, although this method is slightly more popular among lower quintile groups. The number of OC users in any income category is too low to draw reliable conclusions about dependence on public and private sector sources. According to the CMS retail audit, however, the cheapest OCs on the market are equivalent in cost to condoms (approximately US$23 per year).[7] Given the relative comparability of these two resupply methods, we assume that the source patterns for condoms would also be true for OCs.

[7] During the 2001 field assessment, the study team was told by several informants that standard protocols in family planning cabinets require certain laboratory tests prior to initiating a family planning method — an ultrasound prior to insertion of an IUD, blood tests prior to prescription of hormonal contraceptives. While the consultation and supplies offered in the family cabinets are free, facilities are allowed to charge for these tests. Thus, initiation of modern family planning methods may not be free in the public sector, even though donated supplies are distributed without charge.

4.3 Market Segments and Contraceptive Security — Annual Supply Requirements for the Public Sector

The first question this report aims to answer is what proportion of the population relies on public-sector (or donated) contraceptive supplies? The initial approach to this question is to assess who has access to and can afford commercial family planning services or products. In Armenia, the commercial health sector is in a nascent state. There are virtually no clinical, commercial, family planning services available. On the other hand, pharmacies stock a variety of family planning products that are affordable to wide swathes of the population. Based on revealed behavior and accessibility of commercial services, we present a conservative estimate of women who can access the commercial sector (and, therefore, a high estimate of women dependent on the public sector).[8] Those who cannot access the commercial sector are at risk and are the proper target of an Armenian contraceptive security program.

In Armenia, condoms are the only family planning method that is widely used and commonly available in the commercial sector. Table 2 presents the source of supply for condom users. As noted above, a conservative approach was taken to estimating the percent of women who can access the commercial sector. First, it was assumed that there are women who must use the public sector.[9] Second, it was assumed that this need is based largely on economic status.[10] Third, it was understood that data are sometimes imprecise and that subtle shifts in behavior, as opposed to major changes, can signal important differences between the quintiles.

Quick inspection of the public sector line shows a large jump in percent from Quintile 3 to Quintile 2 (from less than 15 percent to more than 30 percent). This jump is viewed as evidence that between the 2nd and 3rd quintile there is a quantum shift in abilities to pay for condoms. Therefore, we argue that for programmatic purposes those women in the bottom quintiles are targets for subsidized or free products in the public sector. We recognize that large proportions of condom users among the poor access the commercial sector. Actual use of condoms among the poor, however, is small. We are taking a cautious approach to the numbers that might be among the safety net population.

Table 2: Source of supply for condom users by quintile

	Quintile					
	1	**2**	**3**	**4**	**5**	**Total**
Public	**35.6**	**30.9**	**10.4**	**11.6**	**7.5**	**14.0**
Not Public	**64.5**	**69.1**	**89.6**	**88.4**	**92.5**	**86.0**
Private	40.9	55.5	61.5	53.3	73.3	61.4
Other**	3.0	6.2	14.3	3.9	1.3	5.1
Don't Know	20.6	7.4	13.8	31.3	17.9	19.4

[8] Other techniques exist for segmenting the population. Approaches that were considered, but rejected are discussed in Appendix I.

[9] Alternatively, given that less than 15 percent of women use the public sector, we could conclude that the public sector has no role to play in the provision of resupply methods.

[10] Rural access is an important issue. The data used in this report, however, does not include retail audits that would reveal whether rural access in the commercial sector is a problem. Although not addressed here, the Armenia contraceptive security plan should look into this issue.

As the commercial prices of condoms and pills (on an annualized basis) are roughly equivalent, we argue that the same segmentation be used for pill users. We recommend that no such segmentation be made for the IUD market until a viable cadre of private sector health providers exists.

As the private sector continues to develop, it may be possible for women to purchase an IUD from a private pharmacy and then bring it to a public health facility for insertion. Also, health reform programs may envision a larger role for private doctors. In the short and medium term, however, donors will need to continue supplying the public sector after current supplies are exhausted.

Based on the above analysis, the family planning market was segmented into four groups, as shown in Table 3: poor resupply method users, not poor resupply users, IUD users, and unaffected. The poor resupply segment includes condom and OC users in the lowest two quintiles; the not poor segment covers users in the top three quintiles. Given the high reliance on the public sector among all IUD users and the noticeable absence of the device in the commercial sector, IUD users were grouped together regardless of wealth. For the purposes of identifying groups that will need continued donated contraceptives, we define the "contraceptive security" requirement as meeting the needs of resupply method users in the two poorest income quintiles and IUD users in all quintiles. Resupply method users in the third through fifth quintiles are deemed able to pay commercial prices for their method in the private sector. Other modern method users, traditional method users, and nonusers are combined into the fourth segment. In determining the minimum need for donated or subsidized contraceptives, these women are considered to be unaffected by the potential discontinuation of donated contraceptive products.

Table 3: Family planning market segments and their characteristics

Segment	Characteristics	Market Size
Poor condom and OC users	Quintiles 1 & 2 70% rural, 30% urban 19% ages 15 – 24 17% university educated Source: Public 40% Private 48% Other* 12%	2% 7,712 women
Not-poor condom and OC users	Quintiles 3, 4, & 5 14% rural, 86% urban 13% ages 15 – 24 41% university educated Source: Public 15% Private 60% Other 24%	5.5% 24,615 women
IUD users	IUD users in all quintiles 39% rural, 61% urban 8% ages 15 – 24 26% university educated Source: Public 98% Private 2%	8.5% 38,156 women
Unaffected	Women who use other modern methods Women who use traditional methods Women who use no method 42% rural, 58% urban 14% ages 15 – 24 15% university educated	84% 377,879 women

* Other sources include husband, friends, and "Don't know."

The assumptions used for estimating annual contraceptive supply requirements are that

- condom users require 120 units per year
- the average lifespan of an IUD is 3.5 years
- OC users require 13 cycles of pills per year
- the population of Armenia is 3 million; 621,000 women of reproductive age, of which the target population (ever married) is 448,362

Based on these criteria, the annual public supply requirements (shown in Table 4) are small, as there are so few users of resupply methods in the lower-income groups. Less than 1 million condoms and 32,000 cycles of pills will be needed to meet the current need each year. The cost of supplying IUDs will be modest — fewer than 11,000 IUDs per year are needed to supply current users of this method in all income groups.

Table 4: Contraceptive security: public supply requirement

	Quintile						
	1	2	3	4	5	Total	Annual Units Required
Current Condom Users	2,376	3,979	-	-	-	6,355	762,629
Current OC users	1,307	1,147	-	-	-	2,454	31,896
Current IUD users	6,247	7,125	8,586	6,724	8,632	37,314	10,661

5 Social Marketing: An Effective Approach to Ensuring Contraceptive Security in Armenia?

Having answered the first question on contraceptive security, that is, defining the population most at risk if contraceptives were no longer available in the public sector, the next issue to explore is what social marketing might be able to contribute to contraceptive security in Armenia. Social marketing could make a substantial contribution to contraceptive security by directing users of modern methods to private-sector sources. Unlike other countries where years of subsidized programs through the public sector have led to high levels of dependency on donated commodities, the proportion of women of reproductive age who depend on donated products in Armenia is low. There is much room for growth for this market and the challenge is to tap into household expenditures rather than public subsidies to help meet the new demand.

Social marketing can help achieve this growth by channeling latent demand for contraception towards modern methods, building brand loyalty, and ensuring sustained supply at affordable prices. While there is a strong commercial presence in Armenia, the current size of the market does not warrant extensive marketing investment by these companies, which might justify a social marketing intervention. The following is a review of possible social marketing activities that could have a positive impact on contraceptive security:

5.1 Building the Perceived Value of Modern Contraceptive Methods

When contraceptives are distributed at no charge through public outlets, their commercial value may be difficult to establish, particularly among low-income consumers. Commercial brands typically are built through consumer advertising, point of sale promotion, and provider-directed activities such as training and detailing. These activities generally are reserved for products that present substantial growth potential, in terms of volume and profit. As long as contraceptives remain marginal products for commercial companies, it may be necessary to carry out these activities through a subsidized social marketing program — at least until the market reaches critical mass and commercial suppliers increase their investment.

The current political environment in Armenia, however, is not propitious to a social marketing program based on demand-creation activities. The pro-natalist orientation of the ministry of health (MOH) makes it unlikely to support a program that advocates family planning, even if the goal were to direct modern-method users to private-sector sources rather than increase overall prevalence.

5.2 Partnering with Commercial Companies to Introduce New Products

As donations are phased out in the public sector, the market will go through a period of adjustment that will likely result in the introduction of new products in the private sector or an increase in the sales of current commercial brands. The extent to which new products might be needed in Armenia varies by method. Based on the preceding analysis, it is unlikely that new pills or condoms will have to be introduced. On the other hand, a disappearance of IUDs in the public sector would mean that most users would lose access to this method. As this is the most popular modern method in Armenia, waiting for the private sector to adjust to a sudden supply void may be unacceptable. Social marketing can help accelerate this adjustment by partnering with an IUD manufacturer and introducing a product in commercial outlets as donations are phased out in the public sector.

There is a potential drawback to this approach, however. Although making IUDs available in the private sector is potentially a more sustainable way to meet the demand for this method, the discontinuation of commodities donations to the public sector may have a negative impact on the availability of IUD insertion services. It is conceivable that public sector clinics may stop offering IUD insertions if products are no longer donated to the Armenia government. This change would have a disastrous impact on IUD availability in Armenia, as insertion costs in the private sector can substantially exceed product costs and many users would no longer be able to afford the method. Consequently, the introduction of a commercial brand of IUD would only improve contraceptive security if women continued to have access to free or low-cost insertion services at public clinics.

5.3 Developing a Subsidized, Product-Based Social Marketing Program

This type of social marketing program (also called distribution-based) is commonly found in countries where commercial presence is limited or commercial products are unaffordable to most users. Distribution-based programs typically develop products specifically for low-income or under-served users and often rely on donated or subsidized commodities, although full cost-recovery is possible in middle-income countries. This approach can help maintain adequate distribution coverage, affordable prices, and sustained promotional activities for products that would otherwise receive limited support and attention from commercial suppliers.

There does not appear to be a need for such a program in Armenia, as affordable commercial brands of condoms and pills seem to be widely available. Introducing new products targeted at the small number of women who might not be able to purchase commercial products would probably be difficult to sustain. Even in the case of the IUD — the most popular method — only 11,000 low-priced products would be needed to supply women in all quintiles. As achieving sales volume is necessary to achieve cost-efficiency in a social marketing program, the pressure to increase sales would inevitably have the effect of crowding out commercial-sector brands.

In spite of the potential benefits of a social marketing program in Armenia, the current political environment, limited market size, and strong commercial presence call for a less ambitious intervention, at least for the time being. The previous segmentation analysis suggests that most current users of donated condoms and pills can be served by the commercial sector with existing products. As the number of users who depend on free condoms and pills is expected to be small, developing targeting techniques for donated products is likely to be more cost-effective than creating new programs designed to introduce cheaper options in the private sector. IUDs will require special attention, however, as continued donations may prove necessary to ensure the availability of insertion services in the public sector. If this is found to be unlikely, a partnership with a commercial IUD supplier may be considered as a means of introducing the product in private-sector outlets.

6 Projections of Future Contraceptive Demand

The final unanswered question is what will the demand for modern contraceptive methods be in the near future? Many factors could impact future demand, including population growth or decline, economic changes, and increased consumer education about methods. In the absence of complete information on population figures and trends, the following projections assume a static population of three million, with the target population of ever married women of reproductive age estimated at close to a half million. In addition to the minimum contraceptive supply requirement described above, total contraceptive demand for two different scenarios was projected over a five-year period, (presented in Table 5). Given that true population numbers are not known, projecting more than five years into the future would likely result in unreliable figures. The first scenario projects a modest increase in demand for contraceptives, based on the assumptions that there are little to no demand creation activities and, therefore, no switching from traditional to modern contraceptive methods. Increase in demand is allocated across modern methods based on reported intended use; we assume that 25 percent of women who intended to use a method actually take up a method of family planning[11] (see Appendix J).

Table 5: Estimated total annual contraceptive demand in five years

	Baseline (no change from 2000 use levels)	**Scenario 1**	**Scenario 2**
Condom	26,167	30,466	48,960
IUD	37,314	42,292	70,491
Pill	4,703	6,333	18,331
Female Sterilization	11,317	11,209	11,400
Other Modern Methods	8,602	8,810	9,575
Total Modern Method Users	**88,103**	**99,110**	**158,757**

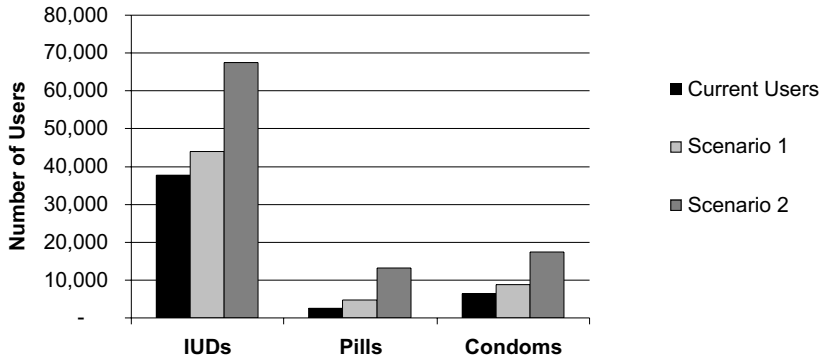
The second scenario projects a higher increase in contraceptive demand. This model assumes the introduction of a demand creation activity (such as a reproductive health hotline) and, therefore, includes a moderate level of switching (37.5 percent) from traditional to modern method use over a five-year period. The scenario further assumes that 25 percent of intenders actually will take up a method of family planning, and allocates increases in contraceptive demand according to intended use. This combination of assumptions showcases the high reported interest (11 percent) among intenders in using OCs in the future, despite the current low rate of use (see Appendix K).

While the above projections estimate total contraceptive demand over five years, of particular interest to USAID/Armenia is the projected demand for modern methods (condoms, OCs, and IUDs) among women who rely on the public sector for family planning. As described earlier, this target group comprises resupply method users in the lowest two quintiles and all IUD users. Women in this group would be at increased risk of unwanted pregnancy and sexually transmitted infections (STIs) if donated supplies were discontinued in Armenia.

[11] Research in Morocco showed that women who say that they intend to use family planning in the future are more likely to actually do so than women who do not say that they intend to use. Not all women who state such intentions, however, will actually start using family planning methods. Also, many women who are using will stop using – often to have children or as the result of side effects.

Two additional scenarios were generated to highlight the future contraceptive needs of this population of women (see Appendices L and M). These alternate scenarios also incorporate intention to use data from *all women* (rather than *ever-married women*) not currently using family planning to address the needs of yet unmarried women who are likely to become sexually active in the near future. Based on these new parameters, both scenarios use the same growth formulas described above (e.g. modest increase of 25 percent of intenders in the first scenario and a higher increase of 25 percent of intenders plus 37.5 percent of traditional method users in the second scenario). Figure 8 compares the projected number of users for three modern methods in Year Five. The first bar for each of the methods represents current public sector users. Scenario 1 incorporates a modest growth in the number of users, based on the incremental addition of women who intend to use a method. Finally, Scenario 2 shows a marked increase in the number of modern method users, assuming the introduction of a demand creation activity, and, therefore, motivating a portion of traditional method users to adopt a modern method.

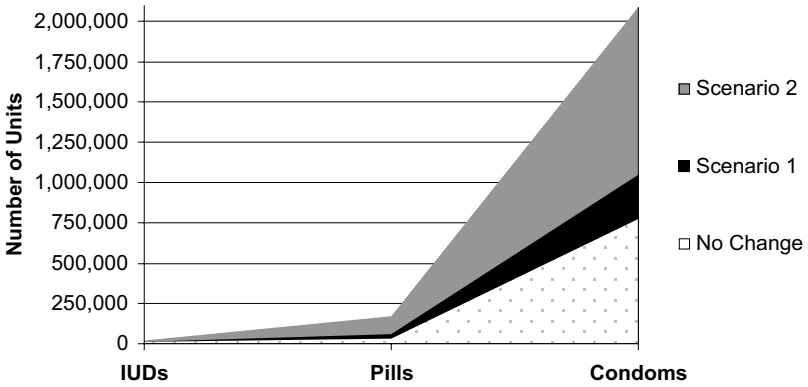
Figure 8: Projected annual public sector contraceptive users by method, Year Five (n=6,430)



Although IUD users dominate through Year Five, this new universe of women — *all* women not currently using a method — actually report less interest in using IUDs than *ever-married* women not currently using a method (as shown in Appendices J and K). Among this group of women, intention to use condoms is substantially higher and replaces IUDs as the preferred method. Intention to use OCs increases as well, although not as dramatically as for condoms. The increased interest in resupply methods may be a function of younger age, but nonetheless it may carry implications for contraceptive security in the public sector.

Another comparison of interest is shown in Figure 9. This graph compares the estimated annual number of units required for each of three modern methods by Year Five. While IUDs represent the largest number of users, because of their 3.5-year lifespan, the number of devices required is nominal, ranging from the current 11,000 to an estimated 19,000 units in Scenario 2. Current demand for OCs, approximately 32,000 cycles, would rise to over 170,000 according to Scenario 2. Finally, existing condom requirements are less than a million, but could rise to 2 million in Scenario 2.

Figure 9: Projected annual public sector contraceptive requirements by method, Year Five (n=6,430)



While Scenario 1 may present the most likely scenario for Armenia in the near future, Figure 9 illustrates the potential impact of demand creation activities, assumed by Scenario 2. In terms of annual units required, the difference between Scenario 1 and Scenario 2 is noteworthy: the number of IUDs and condoms required would almost double and the amount of pills required would nearly triple.

7 Conclusion and Program Recommendations

As indicated above, in the short term the private market is unlikely to meet the demand for IUDs, which are principally provided in public sector health facilities. In addition, the poorer segments of the population rely more heavily on the public sector for resupply methods; hence, it would be important to provide condoms and pills to the poorest 40 percent of the population. Although women from the poorest quintiles show an increased preference for the pill, overall modern method use is still lower among those women.

The amounts required to supply public-sector contraceptive needs are based on all current users of IUDs and resupply method users in the poorest 40 percent of the population. The total supply requirements are quite modest because of the low levels of total contraceptive use, the small national population, and the willingness of wealthier groups to purchase condoms in pharmacies. Thus, we estimate the annual public-sector contraceptive requirements for current users to be

IUDs	10,700
Oral contraceptives (cycles)	31,900
Condoms	763,000

How might the donation of condoms and pills be targeted to the neediest couples? Making the free products available in rural clinics would be a first step. Rural condom users are more dependent on public supplies than are their urban counterparts. It may also be possible to target these supplies to polyclinics or up-and-coming family practices in the poorer parts of the major cities. Another approach would be to use the emerging social-support system in Armenia. This system is intended to identify the neediest Armenians in a controlled manner so that they can receive services (including an expanded free health care benefit) and income supplementation. Free contraceptives could be provided to women of reproductive age who are entitled to social assistance.

While the apparent divide between governmental policies and individual fertility desires calls out for policy interventions, given the current political and economic situation in Armenia, such actions are not likely. A more realistic scenario assumes that the government will not spend its own funds to add contraceptives to the essential drug list and that donations from external donors may cease to exist. Thus, without donated products, the supplies in public clinics could disappear in the coming years.

If no supplies are procured, the private sector may respond by reintroducing IUDs in pharmacies, but this will take time. With so little formal private practice, women would be required to purchase an IUD from a commercial outlet, then request a public-sector provider to insert it. Observations from the CMS assessment indicate that the government may de-emphasize the network of family planning cabinets, although it probably will not close them outright. Delays in replacing staff may be one of the ways in which the government tries to withdraw from the active provision of family planning. It seems unlikely that the government will participate in any campaign to encourage modern methods in place of traditional methods. Any appeal for the use of modern methods could be based on the potentially harmful effects of frequent abortions upon the fertility of the female population. The argument can be made that it is better to postpone child bearing through modern contraception (rather than abortion), and thereby retain fertility so that a woman may have more children when she and her partner decide the time is right. Family planning will survive only as one aspect of a reproductive health strategy that includes safe motherhood and the preservation of population fertility.

Given the Armenian government's reluctance to promote family planning; the expressed fertility desires of the Armenian women; and the extent to which the private sector already provides condoms

and (to a lesser extent) OCs; the most viable strategy is to assist private sector development of the contraceptive market. As explained above, the small size of the market and the current lack of government support suggest that a social marketing program will not work in Armenia and could be expensive when evaluated on the basis of unit costs. The CMS assessment team noted that condoms were displayed prominently in all pharmacies they visited; data from the DHS confirms reliance on pharmacies for purchase of condoms. Gideon Richter and Organon are cautiously marketing their OCs in Armenia. Moreover, OCs were visible in all pharmacies visited by the CMS assessment team. On an annual cost basis, the lowest priced product (Rigevidon) was comparable in price to condoms. Thus, there is a basis for encouraging expansion of the private market for resupply methods.

In light of the current limitations to promoting family planning in Armenia, we propose two related programs that could be undertaken by a USAID contractor in conjunction with the private sector. Both would be part of a larger reproductive health effort:

- A confidential telephone **reproductive health hotline** providing information on pregnancy, abortion, fertility, sterility, sexually transmitted diseases (including HIV/AIDS), menstruation, menopause, and family planning. This hotline would be one of the most effective ways to counteract much of the misinformation about modern methods of contraception. Armenia (as with most of the former Soviet Union) has a relatively good telephone system and widespread access to telephones. The population is highly literate. Doctors could be hired and trained to staff the hotline at modest cost. Drug and condom distributors could sponsor the hotline, although there would be financial support and technical assistance from USAID. The Red Apple hotline in AlmAty, Kazakhstan provides an important and useful precedent for this effort.
- Support for generic **patient education materials** to be provided to pharmacists and doctors by drug distributors in conjunction with product marketing. Condom manufacturers are not likely to produce much in the way of patient education materials and drug distributors will be interested only in promoting their own brands. The distributors interviewed as part of the CMS assessment, however, showed interest in developing the population's understanding of modern contraception, recognizing that it will lead to overall market growth in the long run. The educational materials could be tied to the theme that modern contraception prevents abortions, which are costly and can put future fertility at risk. If the materials are distributed through private-sector marketing efforts, which will be occurring anyway, they should not draw fire from the government in the way that a more overt social marketing or IEC campaign would do.

In addition, to address the constraining policy environment for reproductive health, USAID could establish an **Armenian Network for Reproductive Health Advocacy**. This network would advocate improving policies that affect reproductive health products and services to national and local decision makers. The advocacy network could bring together reproductive health NGOs with an interest in advocacy, women's groups, providers' associations, the women's party in the General Assembly, and others interested in promoting policy changes to foster women's health and reproductive rights. The network would provide a mechanism to educate and pressure the government of Armenia to address critical issues, such as the following:

- **Encourage the Armenian government to procure contraceptives.** The market segmentation analysis can help illustrate the impact of widespread contraceptive shortages. As suggested by the segmentation, the government of Armenia could be encouraged to focus its limited resources on meeting the needs of the most vulnerable and those who would not have access in the private sector. To persuade the government, the network could emphasize the low desired fertility of most Armenian women, and provide information on the prevalence of abortions and how multiple abortions can negatively affects women's health and future fertility.

- **Facilitate commercial sector provision.** If the government is unable or unwilling to procure contraceptives, it can look for mechanisms and reforms that will encourage greater commercial provision. Further, if contraceptives are available in the private sector, the government could be encouraged to support mechanisms such as vouchers, which would allow vulnerable populations to obtain products or services through the private sector.
- **Permit information and demand creation campaigns.** Information and demand creation campaigns could increase modern method prevalence and improve reproductive health by providing information on the negative affects on health and fertility of multiple abortions, address misconceptions about the safety and effectiveness of modern contraceptive methods, and direct clients to appropriate outlets to obtain contraceptives.

The previous CMS assessment highlighted a number of specific policy issues that negatively impact women's ability to choose, obtain, and use contraceptives. An advocacy network could address the following issues:

- Family planning is not included in the MOH's list of strategic priorities for primary care
- Patient education literature is stocked out in some family planning cabinets and is not being replaced
- The government maintains and procures a critical drug list that does not include contraceptives
- Prescriptions are required for hormonal contraceptives
- Registered drugs are subject to a 20 percent value added tax (VAT), an additional state duty, and a fee for customs clearance
- Draft legislation will tighten the conditions under which female sterilization is permitted
- The MOH wants to extend the drug registration law to also include condoms and IUDs, which currently do not require registration.
- Current decrees limit provision of family planning services to obstetricians (it is unclear whether family practitioners are permitted to prescribe hormonals or insert IUDs)
- Mandatory health insurance is being discussed and it has not been decided yet whether family planning will be included in the benefits package
- Direct advertising of prescription drugs in mass media is prohibited

A network focused on advocating for reproductive health would have several benefits. Network efforts could improve the policy environment for reproductive health. Improvements would come from any direct changes to policies, laws, regulations, etc. There may be additional benefits, however, from increasing the debate on reproductive health issues. Effective advocacy or media campaigns could increase awareness of important reproductive health issues and increase popular support for change. Finally, an advocacy network would contribute to civil society in Armenia by increasing advocacy capacity and encouraging government openness to constructive participation by non-governmental interest groups.

Appendix A

Detailed Description of Quintile Methodology

CMS created a wealth index based on household assets. The weights are calculated from an ordinary least squares (OLS) regression analysis of the logarithm of reported per capita household expenditures on selected assets. Urban/rural status also was included in the regression — a variable that expresses the ratio of industrial output to agricultural output in the region where the household is located and interaction terms between urban/rural status and a few assets associated with rural wealth.

We chose to regress the assets on reported expenditures because the general trends in reported expenditures are reliable indicators of relative economic status.[12] Therefore, the magnitudes of the partial correlations produced by the regression equations should be good indicators of the relative importance of the various assets in determining the wealth of a household.

Table A-1 shows the coefficients, t-statistics, and levels of significance for all of the variables in the regression.

Most all of the variables enter significantly in the regression equation. There are two groups of exceptions:

- Television, bicycle, and motor scooter: Televisions are almost universally owned, while almost no one owns bicycles or motor scooters. *A* priori, the lack of variation in ownership makes statistically significant results difficult.
- Ownership of livestock/poultry and access to a garden plot have different interpretations. In a rural setting such things are associated with relative wealth, while in urban areas they are associated with poverty or recent migration from rural areas. Also, these assets are strongly correlated with living in rural areas; therefore, there is an element of strong multi-collinearity among these variables.

Our regression equation has an interaction term to try to correct the problems mentioned. The standard errors of the variable coefficients, however, are still relatively large and their estimates are not statistically significant.

[12] We are not confident that the absolute levels of household expenditures are accurate for several reasons. First, the level of household asset ownership is higher than would be expected with the reported monthly expenditures. Second, the worldwide experience of surveys, such as the Living Standards Measurement Surveys of the World Bank, has shown that a detailed series of questions is needed to accurately assess the absolute level of expenditures in a household. In the Armenia DHS only two questions were posed in this regard.

Table: Regression results calculating the weights used for the wealth index

Dependent variable: Logarithm of reported monthly household expenditures divided by the number of household members (per capita household expenditures)

	Coefficient	T-statistic	Level of Significance
Constant	6.786	37.26	0.000
Has electricity	0.508	3.16	0.002
Has radio	0.122	3.59	0.000
Has television	0.045	0.80	0.423
Has refrigerator	0.391	9.29	0.000
Has bicycle	0.003	0.04	0.965
Has motorcycle/scooter	0.168	1.26	0.206
Has car/truck	0.294	7.66	0.000
Has telephone	0.097	2.62	0.009
Has piped water	0.090	1.93	0.054
Has a flush toilet	0.113	2.14	0.032
Uses refined cooking fuel	0.321	7.18	0.000
Has an improved floor	0.091	2.49	0.013
Ratio of industry production to agricultural production in region of residence	0.195	6.11	0.000
Has access to a garden (1)	0.123	1.25	0.212
Owns livestock or poultry (2)	0.057	0.88	0.378
Urban residence (3)	0.264	2.61	0.009
Interaction of garden and urban status (1*3)	-0.117	-1.08	0.280
Interaction of livestock/ poultry and urban status (1*2)	-0.180	-1.96	0.050

R^2=0.138; Adjusted R^2=0.136

The weighted index of the assets was calculated by applying the coefficients in Table A-1 to the asset ownership status of each household using the following equation:

$$\hat{y} = ß_i X_i$$

ß is the vector regression coefficients

X is the value measured for each household
(in most cases 1, indicating ownership, or 0, indicating non-ownership)

After the index was calculated for each of the households, the households were ranked from low to high. The households were then divided into five equal groupings called quintiles. Table 1 in the main body of text shows the distribution of asset ownership and median reported household expenditures for each of the quintiles.

Appendix B

Percent Distribution of Demographic Characteristics Across Quintiles

	Quintile					
	1	2	3	4	5	Total
Age						
15-19	3.8	2.5	1.7	1.4	1.6	2.2
20-24	12.3	14.1	11.7	9.4	10.3	11.5
25-29	15.2	14.0	13.9	16.4	12.9	14.5
30-34	19.7	16.2	15.7	13.4	14.5	15.8
35-39	17.1	20	23.4	19.7	18.5	19.8
40-44	19.0	19.3	17.1	19.7	21.7	19.3
45-49	12.9	14.0	16.6	20.1	20.4	16.9
Education						
No Education	0.1	0.0	0.0	0.0	0.3	0.1
Primary	0.7	0.3	0.6	0.1	0.0	0.3
Secondary	94.9	90.9	83.2	78.1	66.4	82.4
Higher	4.4	8.9	16.2	21.8	33.3	17.3
Location						
Urban	16.0	33.4	63.2	82.8	94.3	59.1
Rural	84.0	66.6	36.8	17.2	5.7	40.9
Region						
Aragatsotn	13.0	6.8	2.3	1.5	0.0	4.5
Ararat	8.5	16.1	15.9	9.0	1.0	10
Armavir	11.3	14.2	11.9	7.8	2.2	9.4
Gegharkunik	22.1	9.6	6.5	2.1	0.2	7.8
Lori	10	11.3	7.8	7.1	5.1	8.2
Kotayk	1.7	4.5	7.5	9.6	13.4	7.5
Shirak	12.9	13.3	18.4	3.5	2.2	9.9
Syunik	1.3	4.4	4.8	5.2	6.1	4.4
Vayots Dzor	2.3	3.3	1.7	1.7	0.5	1.9
Tavush	13.4	7.3	2.3	1.2	0.3	4.7
Yerevan	3.5	9.3	20.9	51.4	69.1	31.7
Religion						
Christian	97.9	97.6	98.9	98.8	99.1	98.5
Muslim	0.0	0.0	0.0	0.4	0.0	0.1
Other	1.7	1.7	0.8	0.4	0.3	0.9
Not Religious	0.3	0.5	0.3	0.1	0.6	0.4
DK	0.1	0.3	0.0	0.3	0.1	0.1
Ethnicity						
Armenian	96.5	97.1	97.9	98.6	98.5	97.8
Russian	0.2	0.6	0.8	0.5	0.8	0.6
Yazidi	2.9	2.2	1.1	0.4	0.3	1.3
Other	0.4	0.1	0.3	0.5	0.4	0.3

NOTE: For each category column totals equal 100 percent.

Appendix C

Health-Seeking Behavior

	Quintile					
	1	**2**	**3**	**4**	**5**	**Total**
Percent of women who had reason to visit doctor in past year	56.9	52.9	52.5	53.7	48.5	52.80
Of these women:						
Percent of women who actually visited doctor	54.2	56.4	53.6	60.6	68.3	58.50
Percent of women who did not visit due to cost	42.6	39.5	40	33.0	24.5	36.03
Percent of women who did not visit due to other reason	3.2	4.1	6.4	6.4	7.2	5.45
Total	100	100	100	100	100	100
Percent distribution of respondent's own health care expenses in past year						
0 Drams (Dollars)	50.2	41.2	45.5	45.3	46.6	45.70
100-3000 ($.18 - 5.56)	16.3	25.0	20.2	17.6	15.4	18.90
3001-12000 ($5.56 - 22.22)	32.3	31.9	32.7	34.2	34.4	33.10
120001 or more ($22.22+)	1.3	1.9	1.7	2.9	3.7	2.30
Total	100	100	100	100	100	100
Mean health care expenditures in past year						
Drams	10,133	14,602	12,458	15,229	18,660	
Dollars	18.76	27.04	23.07	28.20	34.56	

Appendix D

Abortion Information

	Quintile					
	1	2	3	4	5	Total
Percent distribution of number of abortions						
None	35.7	35.9	34.6	33.8	32.8	34.5
1	18.4	16.8	16.3	14.2	18.2	16.8
2	14.0	14.7	14.6	17.4	17.2	15.6
3 or 4	16.8	18.5	19.0	22.2	17.5	18.8
5 or more	15.2	14.1	15.4	12.5	14.3	14.3
Total	100	100	100	100	100	100
Percent of women who prefer abortion or another FP method						
(Excludes women who are sterilized, n=4512)						
Rely on abortion	6.4	5.6	5.0	4.1	3.7	4.9
Prefer to use method	73.6	74.7	72.4	69.0	71.3	72.1
Prefer to do neither	13.0	14.6	16.8	19.9	20.3	17.0
Don't know	7.1	5.1	5.8	7.1	4.8	6.0
Total	100	100	100	100	100	100
Percent of women who report the cost of an abortion is a problem						
(Excludes women who are sterilized, n=4512)						
No	6.5	8.2	11.6	14.5	21.8	12.7
Yes	83.9	82.1	79.6	73.9	66.1	76.9
Don't know	9.6	9.7	8.8	11.6	12.1	10.4
Total	100	100	100	100	100	100

(n=4643)

Appendix E

Fertility Desires and Unmet Need for Family Planning

	Quintile					
	1	**2**	**3**	**4**	**5**	**Total**
Percent distribution of fertility desires						
Wants within 2 years	7.4	6.6	6.7	7.2	8.6	7.3
Wants after 2 years	6.6	7.4	7.2	8.5	9.1	7.8
Wants, unsure timing	2.5	3.0	3.5	4.8	4.3	3.7
Undecided	3.2	4.4	3.7	3.1	3.7	3.6
Wants no more	75.6	72.0	71.7	69.6	67.9	71.3
Sterilized	2.3	3.3	2.2	2.8	2.0	2.5
Declared infecund	2.5	3.4	5.1	4.0	4.5	3.9
Total	100	100	100	100	100	100
Percent distribution of unmet need for family planning *(standard definition)*						
Unmet need - space	2.0	2.7	2.0	3.0	2.6	2.5
Unmet need - limit	10	8.4	8.6	8.2	8.0	8.6
Using to space	8.9	9.6	10.4	10.5	13.3	10.6
Using to limit	46.4	46.1	47.6	40.1	41.1	44.2
Spacing failure	1.3	1.0	0.3	0.8	0.3	0.7
Limiting failure	1.2	0.3	0.5	0.2	0.0	0.4
Desire birth <2 years	7.1	6.9	6.1	5.6	6.4	6.4
No sex, want to wait	8.2	10.4	8.3	10.2	8.2	9.1
Infecund, menopausal	14.8	14.7	16.2	21.5	20.1	17.6
Total	100	100	100	100	100	100
Percent distribution of fertility desires and use of modern methods						
Currently using modern method	14.4	17.5	19.9	21.1	27.2	20.2
Wants within 2 years	6.8	5.9	5.9	6.7	7.2	6.5
Wants, unsure timing	2.3	2.9	3.2	4.0	3.2	3.1
Wants after 2 years	5.1	5.2	4.6	4.5	4.5	4.8
Wants no more	52.6	49.7	48.1	46.4	41.1	47.5
Undecided	2.9	3.2	3.0	2.2	2.1	2.7
Declared infecund	2.5	3.4	5.1	4.0	4.5	3.9
Infrequent or no sex	13.4	12.2	10.3	11.1	10.3	11.4
Total	100	100	100	100	100	100

(n=4643)

Appendix F

Use of Family Planning Methods

	Quintile					
	1	2	3	4	5	Total
Percent of Women Who Have Ever Used Family Planning						
Never used	21.6	22.2	20.7	23.7	21.4	21.9
Used only folkloric	0.7	0.6	1.0	1.1	1.1	0.9
Used only traditional	29.7	30.4	25.4	20.8	16.7	24.4
Used modern	48.1	46.8	53.0	54.4	60.8	52.8
Total	100	100	100	100	100	100
Percent of Women Who Are Currently Using Family Planning						
No method	44.7	44.4	42.1	49.8	45.7	45.4
Folkloric method	1.1	1.6	1.1	1.4	1.7	1.4
Traditional method	39.9	36.5	36.9	27.7	25.4	33.1
Modern method	14.4	17.5	19.9	21.1	27.2	20.2
Total	100	100	100	100	100	100
Percent of Women Using Modern Family Planning Methods						
IUD	6.3	7.3	9.8	7.9	11.1	8.5
Condom	2.4	4.1	5.7	7.7	10.7	6.2
Female sterilization	2.3	3.3	2.2	2.8	2.0	2.5
Pill	1.3	1.2	1.2	0.6	0.8	1.0
Injection	0.0	0.0	0.0	0.1	0.1	0.1
Male Sterilization	0.0	0.0	0.0	0.0	0.0	0.0
Norplant	0.0	0.1	0.0	0.0	0.0	0.0
Lactational Amen.	2.0	1.6	1.0	1.9	2.1	1.7
Female condom	0.1	0.0	0.0	0.0	0.0	0.0
Foam or jelly	0.0	0.0	0.2	0.1	0.4	0.1
Total	14.4	17.5	20	21.1	27.2	20.2

(n=4643)

Appendix G

Source of Family Planning Methods

	Quintile					
	1	**2**	**3**	**4**	**5**	**Total**
Last Source for Current Modern Method by Specific Methods*						
Female Sterilization (n=125)						
Public	100	100	100	100	92.7	98.8
Private	0.0	0.0	0.0	0.0	7.3	1.2
Total	100	100	100	100	100	100
IUD (n=362)						
Private	3.6	0.9	0.6	3.7	2.6	2.2
Public	96.4	99.1	99.4	96.3	97.4	97.8
Total	100	100	100	100	100	100
Condom (n=265)						
Public	35.6	30.9	10.4	11.6	7.5	14.0
Private	40.9	55.5	61.5	53.3	73.3	61.4
Other**	3.0	6.2	14.3	3.9	1.3	5.1
Don't Know	20.6	7.4	13.8	31.3	17.9	19.4
Total	100	100	100	100	100	100
Percent of all women who obtain method from private sector						
Female Sterilization	0.0	0.0	0.0	0.0	0.1	0.0
IUD	0.2	0.1	0.1	0.3	0.3	0.2
Condom	1.0	2.3	3.5	4.1	7.8	3.8
Total	1.2	2.3	3.5	4.4	8.2	4.0
Percent of all women who obtain method from public sector						
Female Sterilization	2.3	3.3	2.2	2.8	1.8	2.5
IUD	6.1	7.2	9.7	7.6	10.8	8.3
Condom	0.9	1.3	0.6	0.9	0.8	0.9
Total	9.2	11.7	12.5	11.3	13.4	11.7

* Source for Pill too small to compute (n=43)
** Other includes family and friends

Appendix H

Source of Family Planning by Area of Residence

	Quintile					
	1	2	3	4	5	Total
Last Source for Current Modern Method by Specific Methods (Base: *Urban* women who currently use a modern method, *unweighted*)						
IUD (n=200)						
Public	87.5	100	97.9	95.5	97.3	96.5
Private	12.5	0	2.1	4.6	2.7	3.5
Condom(n=177)						
Public	0	25.0	6.9	9.4	8.8	9.6
Private	33.3	58.3	58.6	54.7	71.3	62.7
Other	0	0	17.2	5.7	1.3	5.1
DK	66.7	16.7	17.2	30.2	18.8	22.6
Pill (n=23)						
Public	66.7	75.0	50	100	50	65.2
Private	33.3	25.0	50	0	33.3	30.4
Other	0	0	0	0	16.7	4.4
Female Sterilization (n=59)						
Public	100	100	100	100	92.9	98.3
Private	0	0	0	0	7.1	1.7
Last Source for Current Modern Method by Specific Methods (Base: *Rural* women who are currently use a modern method, *unweighted)*						
IUD (n=162)						
Public	100	98.0	100	100	100	99.4
Private	0	2.0	0	0	0	0.6
Condom (n=88)						
Public	54.6	46.9	23.8	25.0	0	39.8
Private	31.8	43.8	61.9	58.3	100	47.7
Other	4.6	6.3	4.8	0	0	4.6
DK	9.1	3.1	9.5	16.7	0	8.0
Pill (n=20)						
Public	50	50	100	100	0	60
Private	50	50	0	0	0	40
Female Sterilization (n=66)						
Public	100	100	100	100	100	100
Private	0	0	0	0	0	0

NOTE: All totals add up to 100 percent.

Appendix I

Determining Ability to Pay

Evaluation of willingness and ability to pay for family planning services is a difficult and somewhat subjective proposition. Any potential segmentation is subject to qualification and debate. Similarly, any determination will have gray areas, especially near cut-off points. Several criteria were examined, including:

- Comparison of reported per capita household expenditures relative to the price of family planning
- Use of a government-established poverty line
- Analysis of current family planning purchasing behavior

The last criterion was ultimately selected — analysis of current family planning purchasing behavior — as discussed in the main text of this report.

Social marketing programs have sometimes adopted rule-of-thumb measurements such as "family planning costs should not exceed 1 percent of household expenditures or income." We are not comfortable with pursuing such a criterion, as we do not believe that the absolute levels of reported expenditures in the Armenia DHS are accurate. The reported expenditures are too low to support the asset structure reported in the households. For example, among households with a car or a truck, the median of reported monthly household expenditures was only $74 (or $14.55 per household member).

Another popular criterion is to use a government-endorsed poverty line. A poverty line, in its simplest form, says that anyone with an income below a certain level is poor. A great advantage of this criterion is that such definitions are often accompanied by specific mechanisms for classifying and identifying individuals (such as special identification cards). These mechanisms are easily mobilized for means testing schemes. In Armenia, the government currently is grappling with creating social safety net program(s).

Appendix J

Projected Total Contraceptive Demand Over Five Years (Scenario 1)

	Number of Users				
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
% of intenders converted	0.05	0.1	0.15	0.2	0.25
% of traditional method converted	0	0	0	0	0
Condom					
Existing users	27,754	27,754	27,754	27,754	27,754
From intenders	543	1,085	1,628	2,170	2,713
From traditional method users	-	-	-	-	-
Total condom users	28,296	28,839	29,381	29,924	30,466
IUD					
Existing users	38,156	38,156	38,156	38,156	38,156
From intenders	827	1,654	2,482	3,309	4,136
From traditional method users	-	-	-	-	-
Total IUD users	38,983	39,810	40,637	41,465	42,292
Pill					
Existing users	4,573	4,573	4,573	4,573	4,573
From intenders	352	704	1,056	1,408	1,760
From traditional method users	-	-	-	-	-
Total pill users	4,925	5,277	5,629	5,981	6,333
Female Sterilization					
Existing users	11,209	11,209	11,209	11,209	11,209
From intenders	0	0	0	0	0
From traditional method users	-	-	-	-	-
Total female sterilization	11,209	11,209	11,209	11,209	11,209
Other Modern Method					
Existing users	8,698	8,698	8,698	8,698	8,698
From intenders	22	45	67	90	112
From traditional method users	-	-	-	-	-
Total other modern method users	8,721	8,743	8,765	8,788	8,810
Total Modern Method Users	**92,134**	**93,878**	**95,622**	**97,366**	**99,110**

Universe: Ever-married women (n=4,643)

Assumptions

- Projections based on 25 percent of intenders taking up FP
- Assumes no publicity and, therefore, no switching from traditional to modern methods
- Distribution of intenders based on intended modern method use among ever-married women who are not currently using any method

Appendix K

Projected Total Contraceptive Demand Over Five Years (Scenario 2)

	Number of Users				
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
% of intenders converted	0.05	0.1	0.15	0.2	0.25
% of traditional method converted	0.075	0.15	0.225	0.3	0.375
Condom					
Existing users	27,754	27,754	27,754	27,754	27,754
From intenders	543	1,085	1,628	2,170	2,713
From traditional method users	3,616	7,273	10,972	14,712	18,494
Total condom use	31,912	36,112	40,353	44,636	48,960
IUD					
Existing users	38,156	38,156	38,156	38,156	38,156
From intenders	827	1,654	2,482	3,309	4,136
From traditional method users	5,513	11,090	16,730	22,433	28,199
Total IUD use	44,496	50,900	57,367	63,897	70,491
Pill					
Existing users	4,573	4,573	4,573	4,573	4,573
From intenders	352	704	1,056	1,408	1,760
From traditional method users	2,346	4,718	7,118	9,545	11,998
Total pill use	7,271	9,996	12,747	15,526	18,331
Female Sterilization					
Existing users	11,209	11,209	11,209	11,209	11,209
From intenders	0	0	0	0	0
From traditional method users	37	75	113	152	191
Total female sterilization	11,246	11,284	11,322	11,361	11,400
Other Modern Method					
Existing users	8,698	8,698	8,698	8,698	8,698
From intenders	22	45	67	90	112
From traditional method users	149	301	453	608	764
Total other method use	8,870	9,044	9,219	9,396	9,575
Total Modern Method Use	103,795	117,335	131,008	144,816	158,757

Universe: Ever-married women (n=4,643)

Assumptions

- Projections based on 25 percent of intenders taking up FP and 37.5 percent of traditional use switching to modern methods
- Assumes demand creation activity, such as a reproductive health hotline, and, therefore, moderate level of switching from traditional to modern methods
- Distribution of switchers based on intended modern method use among ever-married women who are not currently using any method

Appendix L

Projected Contraceptive Demand Among Women Reliant on Public Sector Over Five Years (Scenario 1)

	Number of Users					Annual Units Required in Year 5
	Year 1	Year 2	Year 3	Year 4	Year 5	
% of intenders converted	0.05	0.1	0.15	0.2	0.25	
% traditional method converted	0	0	0	0	0	
Condom						
Existing users	6,473	6,473	6,473	6,473	6,473	
From intenders	455	911	1,366	1,821	2,277	
From traditional method users	-	-	-	-	-	
Total condom use	6,928	7,384	7,839	8,294	8,750	1,049,947
IUD						
Existing users	37,757	37,757	37,757	37,757	37,757	
From intenders	1,241	2,483	3,724	4,966	6,207	
From traditional method users	-	-	-	-	-	
Total IUD use	38,998	40,240	41,481	42,723	43,964	12,561
Pill						
Existing users	2,525	2,525	2,525	2,525	2,525	
From intenders	436	872	1,308	1,744	2,180	
From traditional method users	-	-	-	-	-	
Total pill use	2,961	3,397	3,833	4,269	4,705	61,163
Female Sterilization						
Existing users	11,240	11,240	11,240	11,240	11,240	
From intenders	11	22	33	44	54	
From traditional method users	-	-	-	-	-	
Total female sterilization	11,251	11,262	11,273	11,284	11,294	
Other Modern Method						
Existing users	3,799	3,799	3,799	3,799	3,799	
From intenders	33	65	98	130	163	
From traditional method users	-	-	-	-	-	
Total other method use	3,832	3,865	3,897	3,930	3,962	
Total Modern Method Users	63,971	66,147	68,323	70,499	72,676	

Universe: All women in sample (n=6,430)

Assumptions

- Population of women of reproductive age is 621,000
- Projections based on 25 percent of intenders taking up FP over five years
- Assumes no intervention or IEC and, therefore, no switching from traditional to modern methods
- Distribution of intenders based on intended modern method use among all women in sample who are not currently using any method

Appendix M

Projected Contraceptive Demand Among Women Reliant on Public Sector Over Five Years (Scenario 2)

	Number of Users					Annual Units Required In Year 5
	Year 1	Year 2	Year 3	Year 4	Year 5	
% of intenders converted	.05	.10	.15	.20	.25	
% of traditional method converted	.075	.15	.225	.30	.375	
Condom						
Existing users	6,473	6,473	6,473	6,473	6,473	
From intenders	455	911	1,366	1,821	2,277	
From traditional method users	1,676	3,379	5,107	6,861	8,642	
Total condom use	8,605	10,762	12,946	15,156	17,391	2,086,945
IUD						
Existing users	37,757	37,757	37,757	37,757	37,757	
From intenders	1,241	2,483	3,724	4,966	6,207	
From traditional method users	4,157	8,582	13,276	18,238	23,468	
Total IUD use	43,155	48,822	54,757	60,960	67,432	19,266
Pill						
Existing users	2,525	2,525	2,525	2,525	2,525	
From intenders	436	872	1,308	1,744	2,180	
From traditional method users	1,646	3,317	5,015	6,739	8,488	
Total pill use	4,607	6,714	8,848	11,007	13,193	171,511
Female Sterilization						
Existing users	11,240	11,240	11,240	11,240	11,240	
From intenders	11	22	33	44	54	
From traditional method users	37	76	117	161	207	
Total female sterilization	11,288	11,338	11,390	11,445	11,502	
Other Modern Methods*						
Existing users	3,799	3,799	3,799	3,799	3,799	
From intenders	33	65	98	130	163	
From traditional method users	122	246	371	499	628	
Total other method use	3,954	4,110	4,268	4,429	4,591	
Total Modern Method Users	71,608	81,746	92,209	102,997	114,109	

Universe: All women in sample (n=6,430)

Assumptions

- Population of women of reproductive age is 621,000
- Projections based on 25 percent of intenders taking up FP and 37.5 percent of traditional users switching to modern methods
- Assumes demand creation efforts, such as a reproductive health hotline and, therefore, moderate level of switching from traditional to modern methods
- Distribution of switchers based on intended modern method use among all women in the sample who are not currently using any method

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